

Application No. 10/029,042

Reply to Office Action of July 7, 2004

Amendment to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1(currently amended) A window balance comprising:

a window frame,

a window sash movably mounted in said window frame,

a torsion spring having a first end and a second end,

a spiral rod within said torsion spring having a third end near the first end, a fourth end near the second end, and a first axis through the third end and the fourth end,

a threaded follower mounted on said spiral rod for being rotated by said spiral rod when said follower is moved along said spiral rod between the third end and the fourth end of said spiral rod,

said threaded follower being attached to the first end of said torsion spring for rotating the first end of said torsion spring by rotation of said follower,

first means for attaching the second end of said torsion spring to a window sash for axial movement of said torsion spring by the sash for moving said follower along said spiral rod by moving the sash, attached to said window sash,

the fourth end of said spiral rod being disconnected from said first means for attaching so that said spiral rod is not moved by said first means for attaching when the sash moves said torsion spring axially.

a gear assembly comprising a first gear and a second gear, fixedly mounted on said window frame, attached to the third end of said spiral rod preventing axial movement of said spiral rod with respect to the window frame and for rotating said spiral rod by said first gear when said first gear is driven by said second gear for changing base force in said torsion spring.

Claims 2-12 (canceled)

Claim 13 (previously presented) A window balance comprising:

a window frame,

a window sash movably mounted in said window frame,

a torsion spring having a first end and a second end,

a spiral rod within said torsion spring having a third end near the first end, a fourth end near the second end, and a first axis through the third end and the fourth end,

a threaded follower mounted on said spiral rod for being rotated by said spiral rod when said follower is moved along said spiral rod between the third end and the fourth end of said spiral rod,

said threaded follower being attached to the first end of said torsion spring for rotating the first

end of said torsion spring by rotation of said follower,

first means for attaching the second end of said torsion spring to a window sash for axial movement of said torsion spring by the sash for moving said follower along said spiral rod by moving the sash, attached to said window sash,

a gear assembly comprising a first gear and a second gear, fixedly mounted on said window frame, attached to the third end of said spiral rod preventing axial movement of said spiral rod with respect to the window frame and for rotating said spiral rod by said first gear when said first gear is driven by said second gear for changing base force in said torsion spring,

an axially extending first element mounted on one of said first means and said gear assembly,

a second element mounted on the other of said first means and said gear assembly axially receiving said first element spaced radially from the axis of the spiral rod when the follower is adjacent to the third end of said spiral rod so that said first element extending a first length into said second element prevents axial rotation of said first means with respect to said gear assembly,

the first length being such that said first element is withdrawn from said second element permitting axial rotation of said first means with respect to said gear assembly when said first means is moved axially away from said gear assembly.

Claim 14 (previously presented) The window balance of claim 1 further comprising:

a tension spring attached to said gear assembly and to said first means.

Claim 15 (currently amended) The window balance of claim 1 further comprising:

a keyed hole in said second gear,

an insert in said keyed hole, keyed to said hole so the insert rotates said second gear when said insert is rotated,

means for urging said insert from a first position on said second gear to a second position on said second gear[.].

Claim 16 (previously presented) A window balance comprising:

a window frame,

a window sash movably mounted in said window frame,

a torsion spring having a first end and a second end,

a spiral rod within said torsion spring having a third end near the first end, a fourth end near the second end, and a first axis through the third end and the fourth end,

a threaded follower mounted on said spiral rod for being rotated by said spiral rod when said follower is moved along said spiral rod between the third end and the fourth end of said spiral rod,

said threaded follower being attached to the first end of said torsion spring for rotating the first end of said torsion spring by rotation of said follower,

first means for attaching the second end of said torsion spring to a window sash for axial movement of said torsion spring by the sash for moving said follower along said spiral rod by

moving the sash, attached to said window sash,

a first gear and a second gear mounted on bearing frame fixedly mounted on said window frame, said first gear attached to the third end of said spiral rod preventing axial movement of said spiral rod with respect to the window frame and for rotating said spiral rod by said spiral rod by said first gear when driven by said second gear for changing base force in said torsion spring.

Claim 17 (previously presented) The window balance of claim 16 further comprising:

a keyed hole in said second gear,

an insert in said keyed hole, keyed to said hole so that insert rotates said second gear when said insert is rotated,

means for urging said insert from a first position on said second gear to a second position on said second gear,

means on said bearing from contacting said insert for preventing rotation of said insert when said insert is in said second position.

Claim 18 (new) A window balance comprising:

a window frame,

a window sash movably mounted in said window frame,

a torsion spring having a first end and a second end,

a spiral rod within said torsion spring having a third end near the first end, a fourth end near the second end, and a first axis through the third end and the fourth end,

a threaded follower mounted on said spiral rod for being rotated by said spiral rod when said follower is moved along said spiral rod between the third end and the fourth end of said spiral rod,

said threaded follower being attached to the first end of said torsion spring for being moved by the torsion spring axially with respect to the window frame between the third end and the fourth end of the spiral rod and for rotating the first end of said torsion spring by rotation of said follower,

first means for attaching the second end of said torsion spring to a window sash for axial movement of said torsion spring by the sash for moving said follower along said spiral rod by moving the sash, attached to said window sash,

a gear assembly comprising a first gear and a second gear, fixedly mounted on said window frame, attached to the third end of said spiral rod preventing axial movement of said spiral rod with respect to the window frame and for rotating said spiral rod by said first gear when said first gear is driven by said second gear for changing base force in said torsion spring.

Claim 19 (new) A window balance comprising:

a window frame,

a window sash movably mounted in said window frame,

a torsion spring having a first end and a second end,

a spiral rod within said torsion spring having a third end near the first end, a fourth end near the second end, and a first axis through the third end and the fourth end,

a threaded follower mounted on said spiral rod for being rotated by said spiral rod when said follower is moved along said spiral rod between the third end and the fourth end of said spiral rod,

said threaded follower being attached to the first end of said torsion spring for rotating the first end of said torsion spring by rotation of said follower,

first means for attaching the second end of said torsion spring to a window sash for axial movement of said torsion spring by the sash for moving said follower along said spiral rod by moving the sash, attached to said window sash,

a gear assembly comprising a first gear and a second gear, fixedly mounted on said window frame, attached to the third end of said spiral rod preventing axial movement of said spiral rod with respect to the window frame when said means for attaching is moved axially by the shaft and for rotating said spiral rod by said first gear when said first gear is driven by said second gear for changing base force in said torsion spring.

Claim 20 (new) A window balance comprising:

a window frame,

a window sash movable mounted in said window frame,

a torsion spring having a first end and a second end,

a spiral rod within said torsion spring having a third end near the first end, an unattached fourth end near the second end, and a first axis through the third end and the fourth end,

a block fixedly attached to the second end of the torsion spring, the block having formed therein a recess for removably receiving the unattached fourth end of the spiral rod,

a threaded follower mounted on said spiral rod for being rotated by said spiral rod when said follower is moved along said spiral rod between the third end and the fourth end of said spiral rod,

said threaded follower being attached to the first end of said torsion spring for rotating the first end of said torsion spring by rotation of said follower,

first means for attaching the block situated at the second end of said torsion spring to a window sash for axial movement of said torsion spring by the sash for moving said follower along said spiral rod by moving the sash, attached to said window sash, and

a gear assembly fixedly mounted on said window frame, attached to the third end of said spiral rod preventing axial movement of said spiral rod with respect to the window frame and for rotating said spiral rod for changing base force in said torsion spring.